

CLAIMS:

1. A method for screening a chemical compound for activity in the treatment, prevention or alleviation of an osteoclast related bone disease in a subject, which method comprises the following steps:

5 • providing a test cell comprising one or more chloride channels of the CIC family;

 • subjecting the test cell to the action of the chemical compound; and

 • measuring the ability of the compound to block the selected chloride channels.

2. The method according to claim 1, wherein the test cell comprises one or more chloride channels selected from the group consisting of CIC-3, CIC-6, CIC-7 and 10 functional analogues thereof.

3. The method according to any one of claims 1 or 2 wherein the osteoclast related bone disease is osteoporosis, osteolytic cancer invasion, osteopetrosis, or Paget's disease of bone.

4. A drug development method, which comprises the identification of a 15 compound by the method according to any one of the claims 1-3.

5. The use of a compound identified as a blocker of a chloride channel of the CIC family by the method according to any one of the claims 1-3 or a pharmaceutically acceptable salt or a prodrug thereof for the manufacture of a medicament for the treatment, prevention or alleviation of an osteoclast related bone disease in a subject.

20 6. A method for the treatment, prevention, or alleviation of an osteoclast related bone disease in a subject comprising administering to said subject a therapeutically effective amount of a compound identified as a blocker of a chloride channel of the CIC family by the method according to any one of the claims 1-3 or a pharmaceutically acceptable salt or a prodrug thereof.

25 7. The use of a blocker of a chloride channel of the CIC family or a pharmaceutically acceptable salt or a prodrug thereof for the manufacture of a medicament for the treatment, prevention or alleviation of an osteoclast related bone disease in a subject.

8. A method for the treatment, prevention, or alleviation of an osteoclast related bone disease in a subject comprising administering to said subject a therapeutically effective amount of a blocker of a chloride channel of the CIC family or a pharmaceutically acceptable salt or a prodrug thereof.